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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/574,987	05/12/2000	Carol A. Becker	82408	9258

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EXAMINER

TRAN, THAO T

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 04/22/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/574,987

Applicant(s)

BECKER, CAROL A.

Examiner

Thao T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13, 27-35 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13, 27-35 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This is in response to the Remarks filed on February 7, 2003. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.
2. Claims 7-13, 27-35, and 37 are currently pending in this application.

Claim Rejections - 35 USC § 112

3. Claims 7-13, 27-35, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7, 34, and 37 are indefinite due to the improper use of the word "disposed". The word "disposed" is defined as "arranged in a particular order" (see American Heritage). There appears to be no order required by the specification.

Note: If Applicant means to indicate that the polymer is dispersed in the solution, please state so.

Claim Rejections - 35 USC § 102

4. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Amatore et al. (J. Electroanal. Chem. Interfacial Electrochem.) or Hoffmann (Nature).

In view of the prior Office Action of December 5, 2002, the rejection of claim 34 by Amatore or Hoffmann has been withdrawn.

5. Claims 34 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Hargreaves et al. (Macromolecules).

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Hargreaves teaches a solution containing protonated anthracene and a polymer from acrylamide fluoroscein isocyanate, vinylpyrrolidone copolymer (see abstract).

Note: Although Hargreaves does not specifically teach anthracene being protonated, since Hargreaves teaches the solution containing water or methanol, water and methanol act as proton sources. Hence anthracene in water or methanol is protonated.

Claim Rejections - 35 USC § 103

6. In view of the prior Office Action of December 5, 2002, the rejection of claim 35 by Amatore or Hoffmann, in combination with Zirino, has been withdrawn.
7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hargreaves as applied to claim 34 above, and further in view of Zirino (US Pat. 5,334,629).

Hargreaves is as set forth in claim 34 above and incorporated herein.

Hargreaves does not teach the polymer in the solution to be a polyacrylic acid-polyvinyl alcohol.

Zirino teaches a solution containing a polyelectrolyte fiber which is a polyacrylic acid-polyvinyl alcohol (see abstract; col. 1, ln. 35-42; col. 2, ln. 44-63).

Zirino teaches that polyacrylic acid-polyvinyl alcohol has good selective light actuation and powering, which in turn would respond better to pH changes by significantly changing its' volume (see col. 7, ln. 66 to col. 8, ln. 12).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have substituted the polyelectrolyte fiber, as taught by Zirino, for the

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polymer of Hargreaves, for the purpose of achieving good light actuation and powering, and hence better response to pH and volume changes.

Allowable Subject Matter

8. Claim 7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

9. Claims 8-13 and 27-33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

No prior art has been found to teach or suggest an apparatus, comprising a solution containing anthracene and a source of visible light, wherein the irradiation with light of a wavelength and of an intensity to establish a pH change in the solution and a polymer in the solution would undergo a change in volume upon irradiation and the light would cause anthracene to phosphoresce; in combination with all of the other limitations in claim 7.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

11. Applicant's arguments have been considered in view of references Hoffman and Hargreaves, but have not found persuasive.

In response to Applicant's remarks on the rejection of the use of "the polymer disposed in the solution", it is hereby noted that if Applicant means to indicate that the polymer is dispersed in the solution, please state so.

In response to Applicant's remarks that Hargreaves does not teach the use of protonated anthracene, as mentioned in paragraph 5 above, although Hargreaves does not specifically teach protonated anthracene, anthracene in Hargreaves' solution would inherently be protonated due to the solution containing water or methanol, which would act as proton sources.

With respect to achieving phosphorescent decay and that the solution containing pyrolytic fiber, it is hereby noted that the claim language in claims 34 and 37 does not include these limitations to distinguish the claims from the prior art. Moreover, if the solution of the reference is the same, the solution would inherently have the same properties in terms of achieving phosphorescent decay.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 703-306-5698. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703-308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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April 21, 2003



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700